# ARTIFICIAL INTELLIGENCE TO MANAGE DIABETES: SYSTEMATIC REVIEW AND META-ANALYSIS OF 12 PUBLISHED CLINICAL TRIALS

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Purpose: Artificial Intelligence (AI) is the stethoscope of the 21st Century with a vast potential to transform the diabetes care. We explored the evidence for the contemporary role of AI to modulate the outcomes in patients with T2DM. Methods: We searched Cochrane Library and MEDLINE to conduct a systematic review and meta-analysis of 12 published clinical trials. Appropriate Boolean operators were utilised with key words filtered by using specific MeSH. Results: The results yielded 12 clinical trials, which are published from 1996-2016, with six publications from Europe, two each from USA and Israel and one each from China and Australia. Cumulatively, 1238 patients (mean 103, SD ± 185, SEM ± 53, minimum 4, maximum 600, 95% CI -14 to 221) have been evaluated. The most common technology used were artificial neural network and fuzzy logic in four trials each, followed by rule-based expert system and control algorithm. The objectives of the technology were varied, which includes, to predict the blood glucose, dosing matrix in artificial pancreas system, glucose control in critical care. Five trials exclusively enrolled T1DM patients. The highest impact factor of the publication was 11.857 in the journal Diabetes Care. Conclusions: The utility of AI is rapidly evolving to change the landscape of diabetes care, with benefits differentiating for precise, standardised, relatively inexpensive method of providing expert diabetic advice, with persistence of improved glycaemic control in varied clinical settings. There is an immense scope to explore the newer technologies like fuzzy logic through global multi-centric trials.